



P-ISSN: 2394-1685  
E-ISSN: 2394-1693  
Impact Factor (ISRA): 5.38  
IJPESH 2020; 7(4): 279-280  
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[www.kheljournal.com](http://www.kheljournal.com)  
Received: 11-05-2020  
Accepted: 19-06-2020

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## Role of nutrition in maintaining health

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### Abstract

Nutrition is how food affects the health of the body. Food is essential—it provides vital nutrients for survival, and helps the body function and stay healthy. Food is comprised of macronutrients including protein, carbohydrate and fat that not only offer calories to fuel the body and give it energy but play specific roles in maintaining health. Food also supplies micronutrients (vitamins and minerals) and phytochemicals that don't provide calories but serve a variety of critical functions to ensure the body operates optimally. The word health refers to a state of complete emotional and physical well-being. Healthcare exists to help people maintain this optimal state of health. Good nutrition is one of the keys to a healthy life. You can improve your health by keeping a balanced diet. You should eat foods that contain vitamins and minerals. This includes fruits, vegetables, whole grains, dairy, and a source of protein.

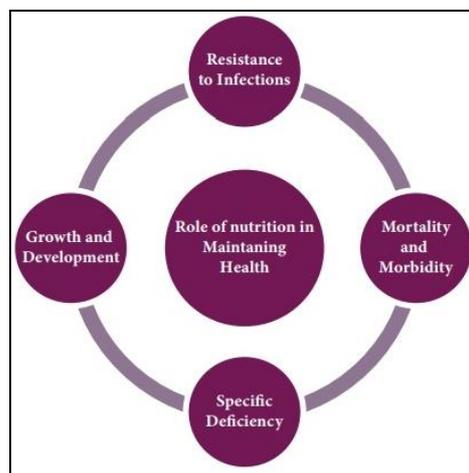
**Keywords:** Nutrition and health

### 1. Introduction

A nutrition diet is one that meets all of the body's macro and micronutrient demands on a daily basis. And also nutrition is a vital component to overall wellness and health. That being said, there doesn't exist one perfect diet for everyone. Certainly, many diet books would have you believe that everyone can follow a particular nutrient prescription to attain optimal nutrition and body weight, but if that were the case, there would only be one diet book and only one diet. Nutrient intakes are based on individual factors, including a person's size and activity level, the types of activities performed, and genetic predisposition. Additionally, an individual's diet should reflect adequate food variety for nutrient balance, be palatable while meeting the daily demands of stress placed on the body, and contribute to an acceptable quality of life. Diet affects energy, wellbeing and many disease states. There is a connection between lifetime nutritional habits and the risks of many chronic diseases such as Cardio vascular diseases, diabetes and cancer. A well balanced diet can prevent such conditions and improve energy levels and overall health and wellness.

### Role of nutrition in maintaining health

Nutrition is a basic element of health. Nutrition influence the health from birth to death.



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### 1.1 Growth and development

- Good nutrition is essential for attainment of normal growth and development during fetal life and childhood. Physical growth, intellectual development, learning and behavior are affected by malnutrition.
- Adequate nutrition is needed for adult life maintenance for optimum health and efficiency.
- Elder people needs special nutrition due to their physiological and chronological changes. Pregnant and lactating mothers require more proteins and nutrients to prevent abortion, growth retardation and low birth weight babies and provide adequate breast feeding for their babies.

### 1.2 Specific deficiency diseases

- The most common deficiencies find in Indians are Protein energy malnutrition, blindness, goiter, anemia, beriberi, rickets etc. There is increased incidence of abortion, prematurity, still birth and low birth weight babies in malnourished mothers.
- Hence, good nutrition is essential to prevent nutritional deficiency diseases, promotion of health and treatment of deficiency diseases.

### 1.3 Resistance to infection

- A well balanced nutrition prevents infections like tuberculosis. Good nutrition enhances wound healing. Improves resistance of an individual towards infections.

### 1.4 Mortality and morbidity

- Malnutrition leads to increased death rate, infant mortality rate, still births and premature deliveries. Prematurity is the major cause of deaths.
- Over nutrition causes diseases like Obesity, diabetes, hypertension, cardiovascular and renal diseases and causes death.

### 1.5 Factors affecting food and nutrition

The following factors affects food and nutrition

- Basal metabolic rate
- Weight
- Age
- Sex
- Climate and environment
- Physical activities
- Physiological state
- Socio economic factors
- Cultural factors
- Life style and food habits
- Food fads
- Child rearing practices
- Religion
- Traditional factors
- Food production and distribution.

### 2. Nutrients

Proteins, carbohydrates, fat, vitamins, minerals, fiber, and water are all nutrients. If people do not have the right balance of nutrients in their diet, their risk of developing certain health conditions increases. Proteins are large molecules formed by the combination of a number of amino acids. About 20 amino acids have been found to occur in proteins and are important from the point of view of human nutrition. Excellent sources of protein include tuna, shrimp, turkey, and cod. Very good sources of protein include snapper, venison, halibut, salmon, scallops, chicken, lamb, beef, calf's liver, spinach, tofu,

mustard greens, mushrooms, soybeans, and mozzarella cheese. Good sources of protein include eggs, milk, collard greens, cauliflower and many legumes including lentils, split peas, kidney beans, black beans, pinto beans and garbanzo beans.

Carbohydrates are the main source of energy for daily activities. Carbohydrates (primarily starches) are the least expensive, the most available, easily obtainable and readily digestible form of nutrient. Carbohydrates are widely distributed in plants. Foods which contain carbohydrates are called energy foods. Carbohydrates are classified according to the number of saccharide (sugar) groups present. They are broadly classified as simple carbohydrates and complex carbohydrates. The simple carbohydrates include monosaccharide's (Single sugar) and disaccharides (Double sugars). Complex carbohydrates include starch, glycogen and fibers. The important sources of carbohydrates in the diets are cereals, millets, roots, tubers pulses, sugar and jiggery.

The name fat may make it sound like something you shouldn't eat. But fat is an important part of a healthy diet. Fat from your diet gives you energy. As a bonus, fat in food helps you feel full, so you don't eat too much. Some foods, including most fruits and vegetables, have almost no fat. Other foods have plenty of fat. They include nuts, oils, butter, and meats like beef. The lipids are a heterogeneous group of substances found in plant and animal tissues, which share the property of being relatively insoluble in water, and soluble in organic solvents, such as ether, chloroform and benzene. Fat contain 9 kcal per gram.

Vitamins are essential organic, compounds that are needed in small amounts in the diet both to prevent deficiency diseases and to support optimal health. The term vitamin (vital amines) was coined by Casmir Funk. The term vital denoting essential for life and amines because these compounds contained an amine functional group. Vitamins are vital, organic, dietary substance that is necessary in only very small amounts to perform a specific metabolic function or prevent an associated deficiency disease. Vitamins are not synthesized by the body and therefore must be supplied through food.

The essential minerals are classified according to their recommended intake. Macro minerals, also called major minerals, are needed in amounts greater than 100 milligrams per day. Micro minerals, also called trace minerals or trace elements, are needed in less than 100 milligrams per day. There are seven macro minerals; calcium, phosphorus, magnesium, sulfur, sodium, potassium, and chloride. As well as being needed in amounts greater than 100 milligrams per day, each of the macro minerals makes up more than 0.01% of the body's weight. We require intakes of the essential trace minerals, or micro minerals, in amounts of less than 100 milligrams per day. The essential trace minerals are iron, zinc, copper, iodine, manganese, fluoride, chromium, selenium, and molybdenum.

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